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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,927	02/27/2002	Swarn S. Kalsi	05770-170001 / AMSC-546	5818

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EXAMINER	
TAMAI, KARL I	

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/083,927	KALSI ET AL.	
	Examiner	Art Unit	
	Tamai IE Karl	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 September 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19 and 30-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19 and 30-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 March 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. The rejection of Claims 1 and 30 under 35 U.S.C. 102(b) over Beerman et al. (Beerman)(US 4,179,635) is withdrawn.

3. The rejection of Claims 1, 5, 30, and 33 under 35 U.S.C. 102(b) over Boer et al. (Boer)(US 5,053,663) is withdrawn.

4. Claims 1, 5, 30 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Boer et al. (Boer)(US 4356419). Boer teaches a stator assembly 1,2 forming an axial passage with thermally conductive, non-magnetic teeth forming channels for coils 3,4,5 and forming a passage for the rotor.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 4356419), in further view of Albright et al. (Albright)(US 4,330,726). Boer teaches every aspect of the invention except ground plane assembly. Albright teaches a fiberglass tie to provide grounding protection (col. 6, lines 14-20). It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer with the fiberglass tie of Albright to provide grounding protection.

7. Claims 3, 4, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 4356419), in further view of Denk (US 4,709,180). Boer teaches every aspect of the invention except axial cooling passages for the circulation of a cooling liquid. Denk a cooling liquid circulated through the axial cooling passages of the magnetic core 90. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer with the fluid cooling of Denk to remove heat from the stator.

8. Claims 7, 8, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 4356419), in further view of Laskaris (US 4,385,248). Boer teaches every aspect of the invention except, the wedge material 2 being graphite based and the epoxy filler between the coil assembly and the coil support. Boer teaches the wedges are epoxy-graphite. Boer teaches the coils are epoxy impregnated, which would inherently include epoxy between the coils and the

support. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer with the wedges being epoxy graphite because Boer teaches the composite material is a good choice for the wedge, and with the epoxy filler between the coils and the support to reduce losses between the winding and the support.

9. Claims 6 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 4356419) and Laskaris (US 4,385,248), in further view of Mariner et al. (Mariner)(US 5,863,467). Boer and Laskaris teach every aspect of the invention except, the epoxy being a polymer. Mariner teaches a polymer graphite material which has good thermal conductivity. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer and Laskaris with the epoxy being a polymer because Mariner teaches the polymer graphite material has good thermal conductivity.

10. Claims 9, 13, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 4356419), in further view of Cooper et al. (Cooper)(US 4,123,676). Boer teaches every aspect of the invention except, a superconducting rotor. Cooper teaches a refrigerated, superconducting rotor. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer with the rotor of Cooper to provide a low loss field rotor.

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 4356419) and Cooper et al. (Cooper)(US 4,123,676), in further view of Albright et al. (Albright)(US 4,330,726). Boer and Cooper teach every aspect of the invention except ground plane assembly. Albright teaches a fiberglass tie to provide grounding protection (col. 6, lines 14-20). It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer and Cooper with the fiberglass tie of Albright to provide grounding protection.

12. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 4356419) and Cooper et al. (Cooper)(US 4,123,676), in further view of Denk (US 4,709,180). Boer and Cooper teach every aspect of the invention except axial cooling passages for the circulation of a cooling liquid. Denk a cooling liquid circulated through the axial cooling passages of the magnetic core 90. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer and Cooper with the fluid cooling of Denk to remove heat from the stator.

13. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 4356419) and Cooper et al. (Cooper)(US 4,123,676), in further view of Laskaris (US 4,385,248). Boer and Cooper teach every aspect of the invention except, the wedge material 2 being graphite based and the epoxy filler between the coil assembly and the coil support. Boer teaches the wedges are epoxy-

graphite. Boer teaches the coils are epoxy impregnated, which would inherently include epoxy between the coils and the support. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer and Cooper with the wedges being epoxy graphite because Boer teaches the composite material is a good choice for the wedge, and with the epoxy filler between the coils and the support to reduce losses between the winding and the support.

14. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 4356419), Cooper et al. (Cooper)(US 4,123,676), and Laskaris (US 4,385,248), in further view of Mariner et al. (Mariner)(US 5,863,467). Boer, Cooper, and Laskaris teach every aspect of the invention except, the epoxy being a polymer. Mariner teaches a polymer graphite material which has good thermal conductivity. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer, Cooper, and Laskaris with the epoxy being a polymer because Mariner teaches the polymer graphite material has good thermal conductivity.

15. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 4356419) and Cooper et al. (Cooper)(US 4,123,676), in further view of Gamble et al. (Gamble) (US 5,777,420). Boer and Cooper teach every aspect of the invention except, the superconductive material being HTS material. Gamble teaches a HTS material for the rotor windings. It would have been obvious to a

person of ordinary skill in the art at the time of the invention to construct the stator of Boer and Cooper with the HTS rotor windings because Gamble teaches that the material is preferred in superconductive rotors.

Response to Arguments

16. Applicant's arguments filed 9/9/2004 have been fully considered but they are moot in view of the new ground of rejection.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai at (571) 272 - 2036.

The examiner can be normally contacted on Monday through Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Darren Schuberg, can be reached at (571) 272 - 2044. The facsimile number for the Group is (703) 872 - 9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KARL TAMAI
PRIMARY EXAMINER

Karl I Tamai
PRIMARY PATENT EXAMINER
November 10, 2004